Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

MICHIGAN

LAW REVIEW

VOL. IX. APRIL, 1911 No. 6

PUBLIC REGULATION OF WATER POWER IN THE UNITED STATES AND EUROPE.

I. UNITED STATES.

THE law of water rights in the United States has been for the most part regulated by the several states, subject, however, to the power of Congress to regulate interstate and foreign commerce, (which includes the control of navigation and of navigable streams in the interest of commerce) and to the control of the United States over waters on public lands and rivers on the international boundaries. The laws of the several states show considerable variation; but in respect to the use of water power, they have until within a few years been based mainly on the protection of private rights and public safety, without establishing any public control for economic reasons. In the mountain and Pacific coast states there has been a large degree of public control in the interest of irrigation. Within recent years a greater realization of the importance of and public interest in water power has led to some significant legislation in some of the eastern and central states, notably in New York and Wisconsin.

Under early English decisions, the ownership and control of land under navigable tidal waters were held to be vested in the Crown; while the beds of non-navigable streams above the tide were considered as private property. These early decisions left undetermined the ownership of the beds of navigable streams above the reach of the tide (instances of this kind being rare in that country); but in early American cases the English law was understood to mean that non-tidal rivers were not public waters nor legally navigable. [1]

[1] Chancellor Kent appears to be responsible for this misunderstanding of the English law which restricted the class of public waters much more than in any of the continental countries of Europe.

In the Atlantic Seaboard states, where conditions were similar to those in England, this view of the English law was accepted and applied for the most part. But even in those states there were some modifications and exceptions, such as the great fresh water ponds of Massachusetts and large fresh water rivers in New York and Pennsylvania (such as the Mohawk), which were held to be public and navigable waters.

West of the seaboard states the public character of all water navigable in fact, whether tidal or not, has been more clearly established. Article IV of the ordinance of 1787 provided that: "the navigable waters leading into the Mississippi and the St. Lawrence and the carrying places between the same, shall be common highways and forever free." By later acts of Congress navigable rivers within public lands were declared to be public highways,[2] and all navigable rivers and waters in the former territories of Orleans and Louisiana (the Louisiana purchase) "shall be deemed to be and to remain public highways."

The enabling acts and state constitutions of many of the Mississippi Valley and the Pacific coast states specifically provide that navigable rivers and waters shall be common or public highways.[3] The Virginia act of 1795 providing for the erection of Kentucky into an independent state goes further and provides that: "The *use* and navigation of the river Ohio, so far as the territory of the proposed state, or the territory which shall remain within the limits of this commonwealth, lies thereon, shall be free and common to the citizens of the United States."

In many of the interior states, not only is the public character of all navigable streams maintained, but public ownership (by the state) of the bed of all streams navigable in fact has been unheld. In some of these states,[4] however, the supposed distinction of the English law has been literally followed and the title to the bed of even large navigable rivers, such as the Illinois has been held to belong to the riparian owners; but even in these states the title of the riparian owners is subject to the public right of navigation and other public uses.

---

[2] Act of May 18, 1796 Ch. 29; Act of March 3, 1803, Ch. 27; Revised Statutes, Sec. 2476.

[3] Iowa, Minnesota, Mississippi, Missouri, Nebraska, Tennessee, Wisconsin, California, Oregon, and Washington.

[4] In Illinois, Michigan, Wisconsin, Ohio, Kentucky and Mississippi. Even in such states, however, land under the Great Lakes is held to be public property, owned by the state and not by the riparian properties. For a discussion of riparian rights in Wisconsin, see: E. A. Gillmore, Riparian Rights in Wisconsin (Senate Document No. 449, 61st Congress, second session); and Moses Hooper, Title to Water Powers of Navigable Rivers in Wisconsin (Jan'y, 1910).

The general situation in regard to what constitutes navigable waters and the ownership of the bed of such waters has been set forth by the United States Supreme Court, in these words:

"The confusion of navigable with tide water found in the monuments of the common law, long prevailed in this country, notwithstanding the broad differences between the extent and topography of the British island and that of the American continent. It had the influence for two generations of excluding the admiralty jurisdiction from our great rivers and inland seas; and under the like influence it laid the foundation in many states of doctrines with regard to the ownership of the soil in navigable waters above tide water at variance with sound principles of public policy. Whether, as rules of property, it would now be safe to change these doctrines where they have been applied * * * is for the several states themselves to determine. * * * Since this court, in the case of the Genesee Chief (12 How, 443) has declared that the great lakes and other navigable waters of the country, above as well as below the flow of the tide, are, in the strictest sense, entitled to the denomination of navigable waters, and amenable to the admiralty jurisdiction, there seems to be no sound reason for adhering to the old rule as to the proprietorship of the beds and shores of such waters. It properly belongs to the states by their inherent sovereignty, and the United States has wisely abstained from extending (if it could extend) its survey and grants beyond the limits of high water."[5]

In private non-navigable streams, the riparian proprietors have in the states east of the Mississippi River a right to the *use* of the water in such streams, subject to the similar rights of other riparian owners. From early times, however, there has been legislation regarding the exercise of such rights; and in some cases public administrative officers have been granted some powers of supervision, especially with reference to the construction of mill dams and reservoirs.

Riparian owners also have rights to the use of water in navigable waters; but such rights are limited by the public interests exercised by the States and by the United States. Whether the title to the beds of navigable streams is vested in the riparian owners or in the state, the use of the water in such streams is subject to the control of Congress in the interests of navigation; and is also subject to some control by the state. It was held by the United States Supreme Court, that grants of power to build dams and utilize water power are "in legal effect subject at all times to the paramount right of the state as trustee for the public to divert a portion of the water

[5] Bradley, J., in Barney v. Keokuk, 94 U. S., 324, 338 (1876).

for public uses, and * * * also subject to the rights in regard to navigation and commerce existing in the General Government under the Constitution of the United States."[6] In a later opinion of the Supreme Court, it was stated that, in the absence of any statute by Congress, a State has plenary power in regard to navigable waters entirely within its boundaries; and that obstructions in these waters may be offenses against the laws of the State.[7]

In another recent case in the Supreme Court involving the power of the States to control the use of waters, the following general principles in regard to public and private rights were laid down by Justice HOLMES in the opinion of the court:[8]

"All rights tend to declare themselves absolute to their logical extreme. Yet all in fact are limited by the neighborhood of principles of policy which are other than those on which the particular right is founded, and which become strong enough to hold their own when a certain point is reached. The limits set to property by other public interests present themselves as a branch of what is called the police power of the state. The boundary at which the conflicting interests balance cannot be determined by any general formula in advance, but points in the line, or helping to establish it, are fixed by decisions that this or that concrete case falls on the nearer or farther side. * * *

"It is sometimes difficult to fix boundary stones between the private right of property and the police power. * * * But it is recognized that the state as *quasi*-sovereign and representative of the interests of the public has standing in court to protect the atmosphere, the *water* and the forests within its territory, irrespective of the assent or dissent of the private owners of the land most immediately concerned. * * * What it may protect by suit in this court from interference in the name of property outside of the State's jurisdiction, one would think that it could protect by statute from interference in the same name within. * * *

"We are of opinion, further, that the constitutional power of the state to insist that its natural advantages shall remain unimpaired by its citizens is not dependent upon any nice estimate of the extent of present use or speculation as to future needs. The legal conception of the necessary is apt to be confined to somewhat rudimentary wants, and there are benefits from a great river that might escape a lawyer's view. But the State is not required to submit even to an

[6] Peckham, J., in St. Anthony Falls Water Power Co v. St. Paul Water Commissioners, 168 U. S. 349, 372-3 (1897).

[7] North Shore Boom & Driving Co. v. Nieunen Boom Co., 212 U. S. 406, 412 (1909).

[8] Hudson Water Co. v. McCarter, 209 U. S. 349, 355-7, (1908).

aesthetic analysis. Any analysis may be inadequate. It finds itself in possession of what all admit to be a great public good, and what it has it may keep and give no one a reason for its will."

Turning to the practical exercise by the states and the United States of control over water power, we shall see that there are early precedents for some degree of public regulation; and in the past few years some significant steps towards a more active control in the public interest, which is more clearly recognized in the recent judicial opinions.

New England. Most of the New England States have established some public supervision over the construction of dams. In Massachusetts the county commissioners must approve plans for the construction and alteration of mill dams and reservoirs; they examine existing works, and direct alterations and repairs.[9] In Connecticut somewhat similar powers are vested in the members of a state board of civil engineers, consisting of the engineer member of the state board of railroad commissioners and an engineer appointed by him in each congressional district.[10] In Rhode Island there is a commissioner of dams and reservoirs, and in Maine an engineer inspector of dams and reservoirs.[11]

The purpose of this supervision seems, however, to be distinctly limited to the protection of public and private rights from damage which might result from unsafe dams. In addition, the laws of these, as of other states, contain provisions to protect the interests of private property owners by the construction of dams or other uses of water.

Mr. Charles Whiting Baker of the Engineering News has recently called attention to a Vermont law, passed in the latter part of the 18th century, fixing the rates of toll that might be charged by owners of (water power) grist mills for grinding grain. Later an amendment was passed exempting grist mills operated by steam power; but in regard to water power mills, it remained on the statute books until a few years ago.[12]

Similar regulations were also enacted in other states; and both in England and in this country, the old fashioned water power mills in former times were within the class of public callings whose charges were subject to public regulation.[13]

---

[9] Revised Statutes of 1906 Ch. 1906. Secs. 44, 45.

[10] Revised Statutes of 1902. Title 56.

[11] R. I. Gen. Laws 1896, Ch. 124; laws of 1900, Ch. 782; 1902, Ch. 991. Maine Revised Statutes of 1904.

[12] Ann. of Amer. Acad. Soc. & Pol. Sci. May 1904.

[13] Beale & Wyman: The Law of Public Callings.

New York. In addition to the general laws relating to mill dams, the legislature of New York has passed numerous acts relating to dams across certain rivers and streams.[14] Such grants, however, were made with but few conditions and without any provision for payment to the state.

The Forest Preserve built up by the State of New York since 1885 has made the state the owner of large tracts of land (1,600,000 acres), especially in the Adirondack mountains, containing abundant opportunities for the development of water power. In 1907 Governor Hughes called the attention of the legislature to the water power possibilities of the state forest lands; and by an act of that year (the Fuller Bill) the state water supply commission was authorized and directed "to collect information relating to the water powers of the state and to devise plans for the development of such water powers." This commission made a report in February 1909; based on extensive studies and surveys of the Hudson, the Genesee and the Raquette rivers. The commission recommended an amendment to the state constitution authorizing the state to build storage reservoirs, and to sell, lease or rent the waters or the power developed therefrom. In this report it was shown that the developed water power on the Hudson river had increased from 12,000 horse power in 1882 to 40,000 horse power in 1899 and 110,000 horse power in 1908.[15]

In 1907 Governor Hughes also secured, in an act granting a franchise to develop water power in the St. Lawrence river, a provision for compensation to the state upon a sliding scale according to the power developed.[16]

North Central States. Some of the north central states have also had a limited supervision over the construction of dams. In Ohio no person may construct a dam (or other specified structures) across a public or navigable river without authorization from the state board of public works.[17] In Indiana, an old law (for organizing corporations authorized to build dams so as to afford slack-water navigation in rivers, provides that an order of the board of county commissioners should be necessary before damming any watercourses.[18]

In Michigan the state constitution of 1850 provided that "No navigable stream in this state shall be either bridged or dammed

[14] New York Revised Statutes of 1901, vol. 3, pp. 271-280, contains a list of such acts.

[15] State Water Supply Commission 4th Ann. Rep. 1909.

[16] Proceedings of the Conference of Governors (1909), p. 326.

[17] Annotated Revised Statutes 1906, Title III, Ch. 5a.

[18] Annotated Statutes 1908, Ch. 44, Art. 2 (1861 p. 105).

without authority from the board of supervisors of the proper county, under the provisions of law."[19] In the revised constitution of 1908, this provision is repeated, with the further clause, that such "permission shall be subject to such reasonable compensation and other conditions as may seem best suited to safeguard the interests of the county and the municipalities therein." This clause was added with reference to the growing importance of the water power question. At the session of 1909 a legislative committee made an investigation of the water power situation in that state; and some legislation was enacted to inaugurate a more effective system of control over future grants.

In Wisconsin there have been a number of steps taken in recent years towards a larger degree of public control over water power. The old law in relation to mills and mill dams was enacted in 1840, before Wisconsin became a state. In 1905 Governor La Follette addressed a special message to the legislature in relation to franchises to dam navigable streams. Laws were passed that year providing for the investigation of water power conditions by the State Forestry Commission and the State Geological and Natural History Survey (the latter in co-operation with the U. S. Geological Survey); and providing that franchises by the legislature for the erection of dams across navigable streams should be forfeited unless exercised within four years.[20]

In 1907 the Wisconsin legislature passed an Act for the incorporation of the Wisconsin Valley Improvement Company, as a means of developing and controlling the water power in the Wisconsin river. This act authorizes a system of reservoirs in that river, assigns to the company the state's riparian and flowage rights and also the power of eminent domain. The company is authorized to establish reasonable tolls for the use of power; and these tolls are to be reduced on a sliding scale as profits increase. The company is required to make reports to the State Railroad Commission as to its expenditures, capital stock, and charges. The state reserves the right to take over the works of the company when authorized by amendment to the state constitution.[21]

In Illinois the early law in relation to dams and mill rights has come down since the Revised Statutes of 1845; and this law apparently still regulates the toll for grinding grain at one-eighth part for

[19] Constitution of 1885, Art. XVIII, Sec. 4.

[20] Wisconsin Laws of 1905. Chs. 95, 475, 521.

[21] Wisconsin Laws of 1907, Ch. 335; Review of Reviews Jan. 1909. An amendment for this purpose was submitted in November, 1910, and adopted, but it seems probable that the question will be submitted again, to avoid some uncertainty in the present situation.

wheat and rye and one-seventh part for Indian corn, oats, barley and buckwheat.[22]

Recent action towards the further utilization and control of water power in this state began with the appointment, under an act of 1905, of an Internal Improvement Commission to investigate the various problems associated with a deep waterway from Lake Michigan to the Gulf of Mexico. In its report in 1907 this commission called attention to the water power which could be developed in connection with waterway improvements in the Illinois river; and this factor was also urged by Governor Deneen in his message of April 10, 1907, submitting to the legislature the report of the commission, and in subsequent special messages to that assembly and his biennial message in 1909.

At the special session of the legislature in 1907 an act was passed for an investigation of the rights of the state in certain navigable waters, the development of water power and building of deep-waterways by a committee of 10 members of the legislature and 5 appointees of the Governor.[23] At the same session an amendment to the constitution was submitted (and adopted in November 1908), authorizing the construction of a deep-waterway in the Illinois river from the Chicago Sanitary Canal to Utica on the Illinois river, and for leasing the water power developed; but no action has yet been taken to carry out this project.[24]

In connection with the proposed development of water power by the state, legal questions have been raised as to the rights of a private company (the Economy Light and Power Company), claiming to hold title to part of the bed of the Des Plaines river as the owner of riparian lands and also under grants from the state canal commissioners.[25] The claims of this company have been upheld by the Supreme Court of Illinois, partly on the ground that the Des Plaines river was not proven to be a navigable stream.[26] But the matter is again in litigation in the United States Court, on proceedings begun by the United States government.

Western States. In most of the states west of the Mississippi river the right to the use of waters is based on the rule of prior appropriation; and the public interest in waters, the right of appropriation and public regulation is declared in the state constitutions,

[22] Hurd's Revised Statutes, Ch. 92; R. S. 1845, Ch. 71, 36.

[23] Laws of 1907, Sp. session, p. 103 (Oct. 16).

[24] Ibid. p. 102 (Oct. 16).

[25] See Special Message of Governor Deneen, Nov. 26, 1907; and Biennial Message of Governor Deneen, Jan. 18, 1909.

[26] People v. Economy Light and Power Co., 241 Illinois, 290.

statutes and judicial decisions.[27] Thus the Colorado constitution provides that:

"The water of every natural stream not heretofore appropriated within the State of Colorado is hereby declared to be the property of the public; and the same is dedicated to the use of the people of the State, subject to appropriation as heretofore provided."[28]

The California constitution of 1879 provides:

"The use of all waters now appropriated or that may hereafter be appropriated for sale, rental, or distribution is hereby declared to be a public use and subject to the regulation and control of this State, in the manner to be prescribed by law."[29]

The Wyoming Constitution (1889), contains the following sections relating to water rights:

"Water being essential to industrial prosperity, of limited amount, and easy of diversion from its natural channels, its control must be in the State, which in providing for its use, shall equally guard all the various interests involved."

"Private property should not be taken unless by the consent of the owner, except for private ways of necessity, and for reservoirs, drains, flumes or ditches on or across the land of others for agricultural, mining, milling, domestic or sanitary purposes; nor in any case without due compensation."[30]

"The water of all natural streams, springs, lakes, or other collections of still water within the boundaries of this State are hereby declared to be the property of the state."

"Priority of appropriation for beneficial uses shall give the better right. No appropriation shall be denied except where such denial is demanded by the public interests."[31]

Public control over the use of waters had been established in Wyoming and Nebraska before 1903. Since that date there has been a marked extension of state control in Utah, Idaho, Nevada, Montana, New Mexico, North Dakota, South Dakota and Oklahoma; and steps in the same direction have been taken in several other western states. The general features of these laws are provisions for the adjudication of existing rights, supervision of the acquire-

[27] Cf. Senate Document 351, 61st Congress 2nd session: Brief and Memorandum relating to Riparian and Water Rights of the Federal Government and of the various States, presented by Mr. Nelson, Feb'y 7, 1910.

[28] Article XVI, Section 5, Constitution of 1876.

[29] Article XIV, Section 1.

[30] Article I, Sections 31 and 32.

[31] Article VIII, Sections 1 and 3.

ment of new rights and control by public officials of diversion from streams.[32]

In some of the southern states there has been recent legislation in relation to water rights. But no effective system of public regulation of water power seems to have been established in any of these states.

United States Government. By act of 1866, Congress recognized the rule of prior appropriation where recognized and acknowledged by local customs, laws and decisions of the courts.[33] The desert land act of 1877 provided for the use of water on lands acquired under this act upon bona fide prior appropriation, and also provided that:

"All surplus water over and above such actual appropriation and use, together with the water of all lakes, rivers and other sources of water supply upon the public lands and not navigable, shall remain and be held free for the appropriation and use of the public for irrigation, mining and manufacturing purposes, subject to existing rights."[34]

An Act of 1891, with amendments, permits the Secretary of the Interior to grant perpetual easements or rights of way from water courses over public lands for the primary purpose of irrigation and such electrical current as may be incidentally developed; but no grant can be made under this act to concerns whose primary purpose is generating and handling electricity. An Act of 1901 authorizes the Secretary of the Interior to issue revocable permits over the public lands to electrical power companies; but this statute does not authorize the collection of a charge or fix a term of years.[35]

By the river and harbor act of 1899 it was made unlawful to construct any bridge, dam, dike or causeway over or in any port, roadstead, haven, harbor, canal, navigable river, or other navigable waterway of the United States without the consent of Congress and until the plans for such structures have been submitted to and approved by the Chief of Engineers and by the Secretary of War. Provision is made, however, that such structures may be built under the authority of the legislature of a state across rivers and other waterways, the navigable portions of which lie wholly within the limits of a single state, provided the location and plans thereof are submitted

[32] R. P. Teele: Review of Legislation on Irrigation and Public Control of Waters, in the New York State Library Reviews of Legislation for 1905 and 1907-08.

[33] Act of July 26, 1866, Ch. 262, Sec. 9; Revised Statutes, Section 2339.

[34] Act of March 3, 1877, Ch. 107. This Act applies to California, Oregon, Nevada, Washington, Idaho, Montana, Utah, Wyoming, Arizona, New Mexico and Dakota.

[35] Address of President Taft to the National Conservation Congress in St. Paul, Minn., Sept. 5, 1910.

to and approved by the Chief of Engineers and by the Secretary of War before construction is commenced.[36]

An Act of 1906 provided for the lease of water power or power privileges in connection with the irrigation projects of the United States Government, as follows:

Sec. 5 That whenever a development of power is necessary for the irrigation of lands under any project undertaken under said reclamation act, or an opportunity is afforded for the development of power under any such project, the Secretary of the Interior is authorized to lease for a period not exceeding ten years, giving preference to municipal purposes, any surplus power or power privilege, and the moneys derived from such leases shall be turned into the reclamation fund and be placed to the credit of the project from which such power is derived: Provided that no lease shall be made of such surplus power or privilege as will impair the efficiency of the irrigation project.[37]

An Act of Congress of June 29, 1906, provides for the control and regulation of the waters of Niagara river. This act authorized the Secretary of War to grant permits for the diversion of water and for the transmission of electrical power from Canada into the United States. Under this act various projects have been approved. A treaty with Great Britain, ratified April 1, 1910, makes more permanent provision for the diversion of water, but not for the importation of electrical power from Canada.[38]

An Act of Congress of June 21, 1906, further regulated the construction of dams across navigable rivers. This provided that when authority is granted by Congress to construct and maintain a dam for water power or other purposes across any of the navigable waters of the United States, the plans must be approved by the Secretary of War and the Chief of Engineers, and that in approving such plans and location, conditions and stipulations may be imposed to protect the present and future interests of the United States.

In March 1908, President Roosevelt stated that he would sign no bills granting water rights which did not provide specifically for the right to fix and make a charge and for a definite limitation in time of the rights conferred. In connection with a bill of this kind, the

[36] This replaced provisions of the River and Harbor Act of 1890, section 7 of which had provided "That it shall not be lawful to build any wharf, pier, dolphin, boom, dam, weir, breakwater, bulkhead, jetty or structure of any kind outside established water lines, or in any navigable waters of the United States where no harbor lines are or may be established, without the permission of the Secretary of War, in any port, roadstead, harbor, navigable river or other waters of the United States, in such manner as shall obstruct or impair navigation, commerce or anchorage of said waters."

[37] Act of April 16, 1906, Ch. 1631.

[38] Annual Report of the Secretary of War, 1910, p. 43.

Senate Committee on Commerce submitted a report, on April 30, 1908, holding that the United States could only control waters for purposes of navigation, that the plan proposed by the President would deprive the States and the riparian owners of their rights; and that if any payment could be required in connection with dams across navigable rivers, it must be as a tax imposed uniformly on all dams and water powers on navigable rivers throughout the country.[39] This report indicates what has been the policy of the United States government; but if Congress wished to support the policy announced by President Roosevelt, it could probably be put in force.

Prior to March 4, 1909, about 4,000,000 acres of public land were withdrawn from agricultural entry by action of the President, because they were regarded as useful for power sites. A large part of these withdrawals have since been restored to settlement, as not containing power sites; and about 1,500,000 acres of other lands have been withdrawn, covering the power sites of 149 rivers in twelve states. In view of a question as to the authority of the President to make such withdrawals, an Act of Congress of June 1910, definitely provides for the temporary withdrawal of lands by the President. The Forest Service, under authority of statute, has made revocable leases for a number of these power sites in forest reserves; but no provision has yet been made with regard to the disposition of power sites not in forest reserves, although legislation on this subject was urged by President Taft in his message to Congress in December, 1910.

Ontario. In 1905 the Provincial legislature of Ontario established a commission to investigate the developed and undeveloped water power in that province. On the report of the commission, a second permanent commission has been established with large authority to take steps to secure and furnish power either by means of new plants or by agreements with existing companies. This commission made an exhaustive investigation to determine the cost of water power development and of electric transmission. With this data it has been able to purchase power on reasonable terms from one of the private companies which has developed Niagara power on a large scale. The commission has undertaken the distribution and sale of that power to the various municipalities of western Ontario.

[39] Senate Report 585, 60th Congress, 1st session.

II. EUROPE.

The countries of Europe have for a long time had laws regulating the use of water rights. But the possibilities for the use of water power for developing electrical energy on a large scale has in recent years made the regulation of water rights from this point of view a subject of vastly increased importance. In a number of countries important new legislation has been enacted within the past ten or twelve years, notably the Baden law of 1899, the Wurtemberg law of 1900, the Bavarian law of 1907, and the amendment to the federal Constitution of Switzerland, adopted in 1908. The general tendency of these laws is to increase the degree of public control over the use of water power, not only in navigable but also in non-navigable streams.

Public control of water power is closely related to the legal doctrines as to the ownership of waters and water courses; and the distinction is often made between public and private waters.

Under the Roman law all permanent flowing waters (*flumina perennia*), were considered as public property. But the German legal ideas early considered the navigability of streams as marking an important distinction. The *constitutio de regalibus* of Frederick Barbarossa, of 1158, claimed navigable streams as "regal;" and under the common law streams, so far as navigable, and navigable arms of the sea, and harbors, were classed as public waters.

Most of the later water laws follow the latter principle, as in Austria, France, and several Swiss cantons. In some districts, however, the rule of the Roman law is more closely followed, as in Wurtemberg, Italy, and some Swiss cantons.[40]

GERMANY.

Water rights, including laws for the use and development of water power, are not regulated by the Empire, but remain under the control of the several states as part of the public administrative law. Articles 65 and 66 of the *Einfuhrungs-Gesetz* (Introduction law to the new Civil Code) of 1896, provide that "The provisions of the several state laws governing water rights, inclusive of mill-rights, accesses to the banks of rivers, rafting, the promotion of irrigation and drainage, right of landing places, islands, river beds, dams and embankments shall remain unaffected."

Under the old common law of Germany, as noted above, navigable rivers are considered the property of the state. Hitherto it

[40] Otto Mayr: Die Verwertung der Wasserkräfte, p. 65.

has been the policy of the German states not to exercise governmental control or ownership over public waters so as to make them sources of fiscal revenue. But the right of usage of such waters has been granted by the state to private persons and municipalities subject to governmental supervision.

Prussia. Water rights in Prussia are regulated by a series of enactments, based on provisions of the General State Law of 1794 (*Allgemeines Landrecht*), and coming down to an Act of 1883. There are also a number of special acts in force in separate provinces and districts.

These laws are based on the principle of private ownership of flowing waters except large rivers and navigable canals. Under them, works for the use of water have been erected and maintained by quasi public corporations, known as *Wassergenossenschaften,* composed of private owners of land and of municipalities. Membership in such associations is made compulsory for all persons whose lands are held to be benefited by the works of the association. An important company is the *Ruhrtal Sperrengesellschaft,* composed of official representatives of the city and the county (*Kreis*) of Aachen and five adjoining counties, which has developed the waters of the river Ruhr for supplying light and power to the local districts united in the company.

At the present time the extension of government control or ownership as a means of fiscal revenue is being seriously considered. An exhaustive report on this subject has been prepared by the ministry of public works; but no action has as yet been taken on this report.

Bavaria. A new law on water rights of March 23, 1907, greatly extends the authority of the administration to regulate the use and utilization of water power in the general interest, makes possible the development of water resources on a systematic plan, and hinders the uneconomic expenditure of these resources. The government retains a free hand over public streams and governmental private streams for the utilization of water power; and at the same time reserves authority over the construction of water power works in private streams.

Public waters are legally defined as streams used for shipping and rafting, as well as the branches of such streams (even if not used for such purposes), and also government canals so far as they are open for shipping and rafting. Public waters are the property of the State.

Private waters may belong to the riparian owners, to the state, or to a third party (e. g. the communes).

The law distinguishes between the common use and the special

uses of waters. The common use both for public and private waters, includes the drawing of water in portable casks, for bathing, washing, drinking and swimming. Special uses are of two kinds: (1) the taking of ice, sand, stone, earth, plants, etc., from the bed of the stream without the construction of works in the stream. In private streams these uses may be exercised by the owners, so far as no detriment is caused to others, particularly in regard to the depth of the stream or the safety of the banks. (2) The use of streams (public or private), by the erection of dams and machinery. In this case the previous consent of the administration is necessary (a) for the erection of dams and machinery in public or private waters; (b) for alterations in such works if they cause a change in the use of the water, the volume of water, or the fall or the height of water; and (c) for other alterations in the principal parts of existing works, even if they do not come under class (b).

Thus the smallest erection for the utilization of water power in both public and private streams is dependent on an authorization from the administration. For works in public waters or State owned private waters, the concession as a rule will be revocable or for a fixed time. The public officials determine the dimensions and methods of the undertaking; and are especially authorized to impose further conditions in the interest of the common use,—that is for the interest of agriculture, forestry and fisheries as well as for trade and industry. For works in private waters the principal regulations are to prevent injury to other property rights. In the case of streams owned by a third party, the course of the stream cannot be changed. In the case of private streams, no payment to the state may be required, except as a reimbursement for expenditures. But in the case of public waters and state owned private streams, payments to the state treasury may be imposed. In this connection it had been learned that in 1904 the income from 84,000 H.P. on public and state owned private streams had been only 9630 marks ($2400); and that under the former law this could not be increased.[41]

Baden. A new water law of June 26, 1899, resembles the Bavarian law in many respects. Public waters include navigable and floatable streams, canals, and lakes; and as component parts of the public waters are included the branches which ordinarily serve as

[41] On the law of waters and water rights in Bavaria, cf. K. Gatterbauer, Das Recht am oeffentlichen Wasser nach altem und neuem bayerischen Recht (1909); Otto Marquard, Die oeffentlichen Wassergenossenschaften des neuen bayerischen Wasserrechts (1909); Alfred Köhler, Das Eigentum des Staates an den oeffentlichen Gewässern in Bayern (1910); and Karl A. Hornstein, Die rechtliche Natur der Wasserbenutzung (1910).

their sources of supply and outlets. The ownership of all public waters belongs to the State.

For all water power works,—whether on public or not public waters—a governmental authorization is necessary. In the case of public waters this may provide for (1) lump sum or periodical payments; (2) the restoration of former conditions on the expiration of the grant; and (3) regulations in regard to price, to prevent excessive or unequal charges.

Provisions are also made for the formation of water companies; and if two-thirds of the proprietors favor a project the remainder may be compelled to unite in a company for carrying out a common undertaking.

Wurtemburg. A new water law of Dec. 1, 1900, went into force January 1, 1902. This goes even further than the Bavarian law in restricting private rights in water courses, by including as public waters all permanently flowing waters. All public waters approximately covered by this definition, which can have a significance for power, belong to the state, except for well established private rights.

Special uses of water, and in particular for water power, are in all cases dependent on a special permission, and, except for well established private rights, on a grant. Grants are made by the local authorities (*Kreisregierung*) and on appeal by the Ministry of the Interior. As a rule there is no time limitation on the grant; but the grant lapses if a full year passes without making use of it.

Carrying out the principle of the law that the state shall make no direct profit from grants of water rights, a tariff of charges connected with such grants and authorization is specified. There are also provisions for compulsory expropriation and in regard to water companies.

Saxony. A new water law of March 12, 1909, passed after prolonged investigation and discussion, is based on the principle of State supervision over the use of flowing waters and establishes the control of the public administration over the use and conservation of waters.

In Hesse, Weimar, Brunswick and Oldenberg the water laws emphasize the public interests, but also recognize private rights more than in Wurtemburg.[42]

SWITZERLAND.

Before the adoption of an amendment to the federal constitution in 1908, the control of water rights and water powers was governed by the various cantons which were the owners of all public waters except where private rights were proved. These laws on water

[42] Jahrbuch des oeffentlichen Rechts, IV, 331-373, 426 (1910).

rights can be classed in three main groups: (1) Those based only on the agricultural use of water, or which had but recently recognized its significance as a technical industrial power. (2) Those laws with some provisions in regard to the economic use of water; but in which the modern technical uses were not fully recognized. (3) Modern water laws. The latter were to be found in Glarus (law of 1892), St. Gall (1893), Ticino (1894) and, most important of all, the new law for the canton of Berne, May 26, 1907. The last contains detailed regulations in regard to concessions for the use of water, with provisions for public supervision and payments (*Gebühren*) for the rights granted.[43]

A number of cantons and communes directly operate water power works. For example, the water supply of Geneva is pumped by means of water power from the river Rhone. In other cases cantons and sometimes communes have granted concessions; in some cases the cantons and communes holding stock in these companies. In connection with such concessions there is a lump charge and also a graduated payment based on the horse power developed.

Under Articles 23 and 24 of the federal constitution, the central government of Switzerland had some indirect control over waters, especially in the mountainous districts. In 1894 a proposal was made to amend the Constitution to extend the powers of the central government. Other propositions were advanced from time to time after that; and a movement, originating in the popular initiative, resulted in the adoption in 1908 of the following article as a part of the federal constitution.[44]

"Article 24b. The Union has supervision over the development of water powers.

"The Federal Congress shall regulate the disposal and terms of water-right concessions, as well as the transmission and delivery of electrical energy, so far as the protection of public interests and the proper development of these resources require such regulation.

"Wherever Federal law does not regulate the terms of the water-right concessions, the disposal of these concessions, as well as the determination and collection of taxes and fees for their use is under the jurisdiction of the cantons. But this regulation by the cantons shall not be so onerous as to discourage the development of water powers.

"In cases where water power is developed on streams which touch upon the territory of several cantons, or upon the national bound-

[43] U. S. Consular Reports, Jan. 1909, p. 128, gives a summary of Berne Law. Cf. Josef Muff: Das Wasserrecht im Kanton Luzern (1910).

[44] Ann. Amer. Acad. Soc. & Pol. Sci. May, 1909.

ary, the disposal of the concessions and the determination of the taxes and fees to be collected by the cantons will rest with the Union, after hearings have been given to the interested cantons.

"The delivery abroad of energy developed from water power requires the consent of the Federal Council.

"The provisions of the Federal law apply also to the already existing water-right concessions, unless exception is expressly made."

AUSTRIA-HUNGARY.

An Austrian imperial water law of 1869 establishes a frame-work, within which operate the sixteen provincial water laws. The imperial law is based distinctly on agrarian conditions, with no reference to industrial uses. This law distinguishes between public and private waters. Public waters are considered as general or public property owned by the state, and their use subject to governmental regulation.

In Bohemia, for example, concessions for the use of public waters are granted by the local authorities; and provide that the use of the water for fire-protection, irrigation or navigation purposes must not be impaired. But no public control of water power seems to have been established.

The Hungarian water law of 1885 declares all streams to be public.

ITALY.

The existing law of water rights is laid down in three acts: the law of March 20, 1865 on public works, the civil code of June 25, 1865, and the law of Aug. 10, 1884 on the diversion of public waters.

According to the established customs and judicial administration, all permanent flowing waters, and also lakes with an open outlet, are classed as public waters. Except for cases where older private rights exist, the bed and the use of almost all waters available for water power belong to the State.

According to the law of 1884 the construction of works on public waters is authorized only by a legal title or a concession granted by the government, which is dependent on the payment of a rent and other conditions named in the law.

Concessions on lakes and connecting streams and on navigable streams are granted by a royal decree, on the proposal of the Finance Minister, after an opinion from the provincial council and the higher technical officials. On other public water courses concessions are granted by the provincial prefects in the prefectoral council after a hearing of the government public works office. As a rule concessions are granted for thirty years.

From 1885 to 1899, there were 1091 concessions granted for the use of water power in public waters, for 156,198 H. P.

The law of 1903 on municipal undertakings authorizes the communes to own and operate a variety of public works, such as water works, lighting, power, tramways, telephones, etc., which may be operated by water power.

A number of water powers in Italy have been reserved by the government with a view to their use when the state railroads may be changed to electrical motive power.

In 1907 the government submitted a project of law to develop the law of 1884 so as to increase the authority of the government to protect water power in public waters from private speculation, to allow consumers and public corporations the widest facilities in the utilization of water power for common purposes, and to establish a firm control over the water rights of the Kingdom.

FRANCE.

The law of water rights in France is based on provisions in the Code of Napoleon, supplemented by later legislation, including an important act of 1898. Public waters include those which are navigable or floatable; and these are controlled by the state and its organs, which is proprietor both of the beds of such waters and of all water rights. In private streams (all those not navigable or floatable), the riparian proprietors own the bed to the middle of the stream, and also the right of using the waters. The law provides that for every water power works, alike on public and private waters, there must be an administrative authorization. But in case of private streams the only requirements that may be imposed are for the public safety (e. g. protection against floods), and for protecting the rights of other property owners. For private works there is no provision for condemnation proceedings; and projects for utilizing water power may be prevented by the opposition of a few proprietors of water rights; while water rights are said to be secured for speculative purposes. The administration may establish public works under condemnation proceedings; but such works are restricted to declared objects of public utility, and no part of the power may be used for private industries.

These conditions have led in the past decade to considerable discussion and various proposals for changes in the law; and in 1906 a definite project was presented to Parliament.[45] This proposes to create two new classes of works: (a) privileged private works which may be authorized without the consent of all the riparian

[45] Revue du Droit Publique, XXIV, 323 (1908); XXVII, 326 (1910).

proprietors, and the authorization may contain larger provisions in the public interest than under the present law, but there are no provisions for public control of rates or for any payments to the government; (b) Hydraulic works may also be authorized whose *principal* object is to furnish power for the public services of the state, local authorities or authorized associations (as for railroads, tramways, or the public distribution of light and power), and for these the power of condemnation may be granted.

NORWAY AND SWEDEN.

Water rights in the Scandinavian countries are regulated largely by a royal ordinance of December 30, 1880, supplementing earlier laws and judicial decisions. The existing law is based primarily on the private rights of the owners of riparian property; and there has been little recognition of the growing tendency toward the public legal character of waters.

About ten per cent of the water power in Sweden is the property of the State, notably the water falls at Trollhättan and Elfkarleby in south and middle Sweden. At Trollhättan the government is erecting an extensive water power plant.[46]

The Swedish government has taken up the question of a revision of the water laws; and in 1906 established a permanent water power commission.

In Norway a law of 1905 restricts foreigners from utilizing the natural resources (forests, mines and water falls), of the country, by requiring more than half of the directors of corporations engaged in such work to be citizens of Norway. This policy seems likely to hinder the development of water power.

U. S. Consul General Henry Bordewich has reported from Christiana that two bills had been introduced (in 1908), in the Norwegian legislature to grant a German company permission to acquire the Tyin and Matre water courses in Bergenstift in West Norway, with a view of developing the water power. Among the conditions provided, the company was to pay yearly to the state 1 krone (26.8 cents), per H.P. beyond the 10,000 horse power which the water courses are supposed to supply while undeveloped. The price of water power may not be increased, and 500 H.P. must be supplied for public use at a yearly rate of 30 kroner. Work should be commenced within five years and completed within twelve years. For the former period foreign engineers and workmen may be employed; but the ordinary conditions as to Norwegian workmen and material

[46] The Engineer (London) 1908.

are the essential rule. After 75 years both plants shall revert to the State.[47]

A law of September, 1909, requires an official authorization for the utilisation of waterfalls of over 1000 H.P. with provisions for the reversion of the plant to the State at the end of a period of 60 to 80 years, and for supplying up to five per cent of the power to the municipality and up to five per cent additional for the State.[48]

JOHN A. FAIRLIE.

UNIVERSITY OF ILLINOIS.

[47] U. S. Consular & Trade Reports, No. 340, p. 130 (Jan. 1909).
[48] Jahrbuch des oeffentlichen Rechts, IV, 557 (1910).